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(54) **A process for the manufacture of carpets**

(57) A carpet produced by a method comprising impregnating a non-woven mesh supported scrim with a synthetic binder, laminating a plastics foam layer to one side of the scrim, laminating a plastics anchoring layer to the opposite side of the scrim and applying synthetic fibres to the anchoring layer whilst it is still wet.

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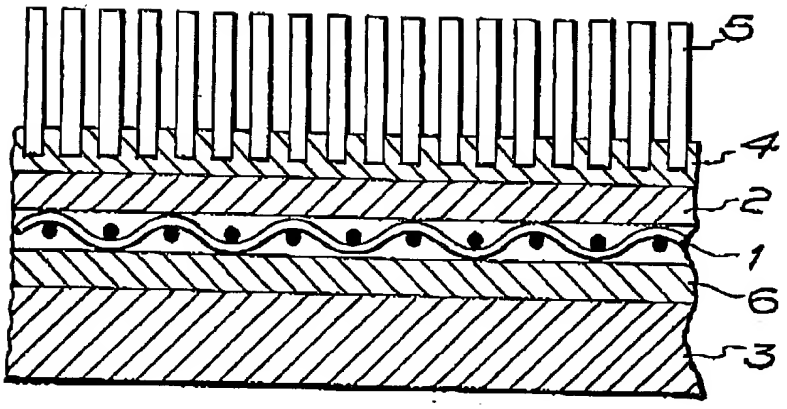

SPECIFICATION

## Improvements in the manufacture of carpets

This invention relates to the manufacture of carpets.

It has been proposed to manufacture a non-woven carpet from laminations of rayon of viscose adhesively bonded to a viscose scrim.

A carpet produced from rayon viscose lamination is quite satisfactory for contract carpets which are secured to a floor by adhesive but are unsatisfactory in the domestic field which are laid loose on the floor and cockle, i.e. will not lie flat.

The object of the invention is the production of carpets which will remain flat when laid loose, i.e. unsecured to the floor.

After considerable experimention it has been found that a supporting scrim of glass fibre mesh laminated on one side to a p.v.c. foam layer with unwoven fibres bonded to the opposite side will retain a perfectly plain, flat surface which will be flat on a floor and is dimensionally stable and rot proof.

The method according to the invention comprises impregneting a laminated mesh supported non-woven fibrous scrim with a synthetic binder, laminating a plastics anchoring layer to the opposite side of the scrim and applying synthetic fibres to the anchoring layer whilst it is still wet.

A non-woven scrim of glass fibre mesh 1 is impregnated with a synthetic binder and has laminated on one side a non-woven fibrous substrate 2.

A p.v.c. layer 3 is bonded to the mesh 1 on the opposite side to the non-woven fibrous substrate 2. A p.v.c. anchoring layer 4 is laminated to the opposite side of the non-woven fibrous substrate 2 from the glass fibre mesh 1 and whilst still wet unwoven synthetic fibres 5 are applied to the anchorage layer 4 of the non-woven fibrous substrate.

Measured quantities of the fibres 5 such as nylon may be applied to the anchorage layer 4 by the apparatus described in Specification no. 1142039 Besnier-Flotex.

The non-woven fibrous substrate may be of glass tissue of 10–100 g/m² and preferably 30–80 g/m² containing 10%–30% of a thermoplastic, thermosetting or crosslinking binder.

Other non-woven fibrous materials can be used provided that they can withstand subsequent processing at temperatures of 150–200°C without melting or decomposition and are dimensionally stable at normal temperatures, e.g. polyester, ceramic, rock silicate etc.

This non-woven fibrous substrate 2 is laminated to the bonded glass fibre mesh network of mesh size 1 × 1/cm to 6 × 6/cm, preferably 3 – 5 × 3 – 5/cm.

The glass fibre mesh is encapsulated in the resinous system and laminated at the crossing points to the non-woven fibrous substrate 2 by the application of heat forming a scrim.

In manufacturing the carpet the scrim is coated with a p.v.c. plastisol 5 to the mesh side of the scrim which on subsequent heating is converted to a solid or a foamed p.v.c. layer known as the 'backing'.

The coated scrim is then re-coated, preferably on the non-woven fibrous side of the scrim, with a further coating, 'flock adhesive', preferably a p.v.c. plastisol, and while the coating is still wet synthetic fibre, preferably nylon, is anchored into the wet coating by electrostatic deposition. The whole is then heated to cure the coating and complete the anchorage process.

The flocked material can then be printed by conventional textile printing techniques.

The carpet, because of its rotproofness and dimensional stability, can be used in areas previously unsuitable for conventional carpetings or other flocked carpet constructions, such areas being high water spillage areas, and areas subject to the growth of cellulose-attacking micro-organisms.

Because of its dimensional stability the product can be looselaid,i.e. not bonded to a floor, in normal domestic or contract flooring installations without shrinkage, expansion, 'curling' or 'rucking' occuring.

The following are examples of the material which has a perfectly flat, plain surface which will lie flat when loosely laid on a floor and is dimensionally stable and rot proof.

An 60 g/m² non-woven glass fibre substrate 2 laminated to a bonded glass fibre network 1 of mesh size 4 × 3/cm. A 17 mm layer of p.v.c. foam 6 which is bonded to and partially impregnated into the scrim on its mesh side. A 2.3 mm layer of nylon fibres 5 bonded to the other side of the scrim from that of the p.v.c. foam layer 3 by the layer of p.v.c. adhesive 4.

## CLAIMS

1. A method for the production of carpets comprising impregnating laminated mesh supported non-woven fibrous scrim with a synthetic binder, laminating a plastics foam to one side of the scrim, laminating plastics anchoring layer to the opposite side of the scrim and applying synthetic fibres to the anchoring layer whilst it is still wet.

2. A method as in Claim 1 in which the scrim is composed of a non-woven glass fibre substrate laminated to a woven glass fibre mesh.

3. A carpet produced by the method of Claim 1 comprising a non-woven glass fibre substrate laminated to a woven glass fibre mesh, a layer of p.v.c. foam laminated to one side of the scrim, an anchoring p.v.c. layer laminated to the opposite side of the scrim

and nylon fibres adhered to the anchoring layer.

4. A method for the production of carpets substantially as hereinbefore described.

5. A carpet when produced by the method of Claim 1 substantially as described with reference to the accompanying drawing.

6. A carpet when produced by the method of Claim 1 substantially as described with reference to the accompanying examples.

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# SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 02 74 4545

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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

B32B
D04H
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The supplementary search report has been based on the last set of claims valid and available at the start of the search.

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 4 August 2004 | Schweissguth, M |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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